Name Class Date

**The Biosphere Chapter Test B**

**Multiple Choice**

*Write the letter that best answers the question or completes the statement on the line provided.*

\_\_\_\_\_ **1.** Which of the following descriptions about the organization of an ecosystem is correct?

**a.** Communities make up species, which make up populations.

**b.** Populations make up species, which make up communities.

**c.** Species make up communities, which make up populations.

**d.** Species make up populations, which make up communities.

\_\_\_\_\_ **2.** The lowest level of environmental complexity that includes living and nonliving factors is the

**a.** biome. **c.** ecosystem.

**b.** community. **d.** biosphere.

\_\_\_\_\_ **3.** Which of the following is NOT a basic method used by ecologists to study the living world?

**a.** experimenting **c.** modeling

**b.** animal training **d.** observing

\_\_\_\_\_ **4.** Plants are

**a.** primary producers. **c.** herbivores.

**b.** primary consumers. **d.** omnivores.

\_\_\_\_\_ **5.** Compared to land, the open oceans

**a.** have less zooplankton.

**b.** contain unlimited nitrogen.

**c.** are nutrient-poor environments.

**d.** are rich in silica and iron.

\_\_\_\_\_ **6.** All the interconnected feeding relationships in an ecosystem make up a food

**a.** interaction. **c.** network.

**b.** chain. **d.** web.

\_\_\_\_\_ **7.** The total amount of living tissue within a given trophic level is called the

**a.** organic mass. **c.** energy mass.

**b.** trophic mass. **d.** biomass.

\_\_\_\_\_ **8.** A word that means the same thing as *consumer* is

**a.** producer.

**b.** autotroph.

**c.** heterotroph.

**d.** carbohydrate.

\_\_\_\_\_ **9.** Matter can recycle through the biosphere because

**a.** matter does not change into new compounds.

**b.** matter is assembled into chemical compounds.

**c.** biological systems do not use up matter, they transform it.

**d.** biological systems use only carbon, oxygen, hydrogen, and nitrogen.

**107**

Name Class Date

\_\_\_\_\_**10.** What is happening to water at D in Figure 3–1?

**a.** Water is falling to the ground as precipitation.

**b.** Water is evaporating from the ocean.

**c.** Water is being taken up by plants through transpiration.

**d.** Water is seeping into the ground to become groundwater.

\_\_\_\_\_**11.** Nitrogen fixation is carried out primarily by

**a.** humans. **c.** bacteria.

**b.** plants. **d.** consumers.

\_\_\_\_\_**12.** The movements of energy and nutrients through living systems are different because

**a.** energy flows in one direction, and nutrients recycle.

**b.** energy is limited in the biosphere, and nutrients are always available.

**c.** nutrients flow in two directions, and energy recycles.

**d.** energy forms chemical compounds, and nutrients are lost as heat.

\_\_\_\_\_**13.** Animals that get energy by eating the carcasses of other animals that have been killed by predators or have died of natural causes are called

**a.** scavengers. **c.** heterotrophs.

**b.** omnivores. **d.** detritivores.

\_\_\_\_\_**14.** Each of the following is an abiotic factor in the environment EXCEPT

**a.** plant life. **c.** rainfall.

**b.** soil type. **d.** temperature.

\_\_\_\_\_**15.** The branch of biology dealing with interactions among organisms and between organisms and their environment is called

**a.** economy. **c.** recycling.

**b.** modeling. **d.** ecology.

**Completion**

*Complete each statement on the line provided.*

**16.** The study of interactions among organisms and between organisms and their physical surroundings is called .

**17.** Organisms within an ecosystem are factors in that ecosystem.

**108**

Name Class Date

**18.** In the water cycle shown in Figure 3–2, the process of occurs between transpiration and precipitation.

**19.** Suppose extra nitrogen were added to the ecosystem in which the organisms in Figure 3–3 live. The population would increase almost immediately.

**20.** In Figure 3–3, the top consumer is steps away from the primary producer.

**Short Answer**

*In complete sentences, write the answers to the questions on the lines provided.*

**21.** Using Figure 3–3 above, explain the relationship between sharks and the sun.

**22.** Identify the biotic and abiotic factors in Figure 3–4.

**23.** Explain how the biogeochemical cycling of oxygen, carbon, nitrogen, and hydrogen are important to living systems.

**109**Name Class Date

**24.** What events typically contribute to an algal bloom in a lake or ocean?

**25.** Describe the flow of energy to a third-level consumer if the producers provide 1500 calories of energy to the first-level consumers.

**Using Science Skills**

**26.** **Interpret Visuals** What is the longest food chain in Figure 3–5 that contains grass as a producer?

**27.** **Interpret Visuals** What are the primary producers in Figure 3–5?

**28.** **Draw Conclusions** Are there any omnivores in Figure 3–5? Explain your answer.

**29.** **Draw Conclusions** Which species would be MOST affected if a disease killed off most of the trees in the ecosystem shown in Figure 3–5? What other species might be affected? Explain your answers.

**30.** **Apply Concepts** Would the snake obtain a greater percentage of energy from the grass after eating a frog or a grasshopper in Figure 3–5? Explain your answer.

**110**